



To protect the generator from damage, the cutout relay opens the circuit, preventing a reverse flow of current from the battery to the generator. As shown above, the cutout relay has two windings on the same core

## Ignition System

A DIAGRAM of the ignition system is shown at the lower right. The ignition system is only a branch of the electrical system. It handles the job of actually firing the fuel charge in the cylinders. The ignition system includes the battery, coil, distributor, condenser, spark plugs and wiring.

The schematic drawing shown above is the wiring layout for the generator regulator. The regulator gauges the amount of electrical current supplied by the generator. The regulator consists of three instruments—the circuit breaker, current regulator and the voltage regulator. All three instruments are merely relays, two of which—the current and voltage regulator—open and close the generator field circuit. In reality, the circuit breaker is an automatic switch, which opens the generator-charging circuit when the generator is inoperative, or when the voltage output is below that of the battery. This prevents discharging the battery back through the generator.

**Cleaning contact points:** One of the most important service operations on regulators is cleaning contact points. Dirty or oxidized points arc and burn, cause reduced generator output and run down batteries. If points are properly cleaned, the regulator will be restored to normal operation. If improperly cleaned, improvement in performance will be small and only temporary. Remove the upper contact supports so that each point may be separately cleaned. Use a thin, fine-cut contact file and file each point separately. Do not use the flat file excessively on the rounded (smaller) point.

If the flat point has a cavity in it, use a spoon or riffler file to clean out the pit. Reassemble contact supports and adjust air gap. Never use emery cloth or sandpaper to clean the contact points.

**Quick checks:** Should trouble of any type be suspected in the ignition system, the following quick checks will prove helpful in isolating it.

If the engine will not run even though the starter cranks it at normal speed, remove the lead from a spark plug and hold it about  $\frac{3}{16}$  in. from the engine block while

Parts of ignition system which handle the job of actually firing the fuel charge in the engine cylinders

